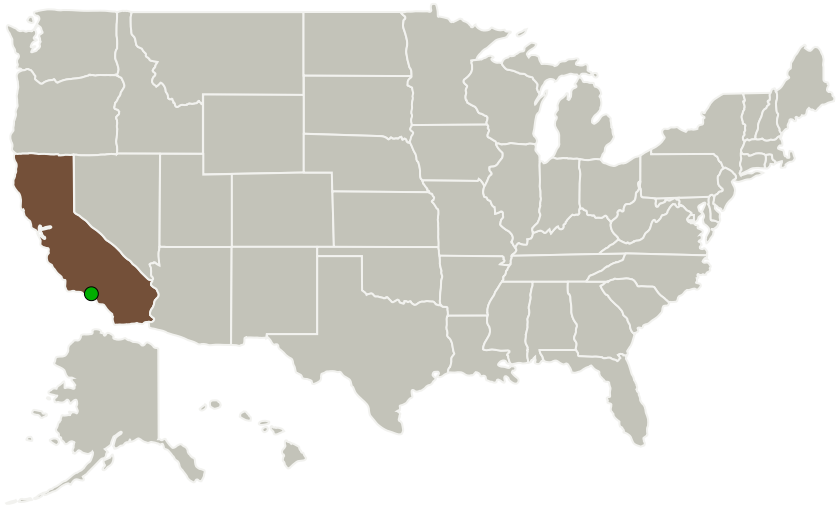
Extreme Environment Hybrid Gearbox Technology, Phase I

Completed Technology Project (2011 - 2011)

Project Introduction

Rocketstar Robotics proposes the development of a gearbox that uses all ball rolling contact for the highest loaded output gear reduction stage(s), is dry film lubricated and limits peak stresses to the well documented threshold limitation of dry film lubricants. Extensive test data exists in the literature for the reliable application of dry film lubricants in ball bearing applications. A gear reducer that utilizes ball bearing gear elements as the gear reducers highest loaded components will provide high specific torque and reliable, long life performance consistent with existing test data.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
NEA Electronics, Inc.	Lead Organization	Industry	Moorpark, California
Jet Propulsion Laboratory(JPL)	Supporting Organization	NASA Center	Pasadena, California

Primary U.S. Work Locations
California

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Project Transitions

February 2011: Project Start

September 2011: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/140231)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

NEA Electronics, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

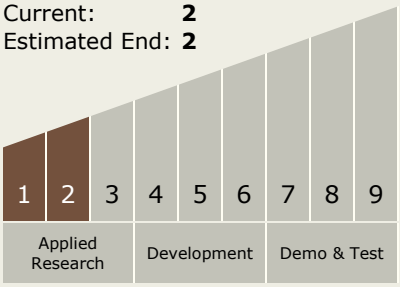
Carlos Torrez

Principal Investigator:

Douglas Packard

Technology Maturity (TRL)

Start: **1**
Current: **2**
Estimated End: **2**



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Technology Areas

Primary:

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
  - TX12.3 Mechanical Systems
    - TX12.3.4 Reliability, Life Assessment, and Health Monitoring

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System